

Sneath

DARTMOUTH COLLEGE  
∴ Department of Geology ∴  
HANOVER · NEW HAMPSHIRE

November 2, 1960

Dr. Joshua Lederberg  
Department of Genetics  
Medical Center  
Stanford University  
Stanford, California

Dear Dr. Lederberg:

It would be possible for us to ship you samples of our original ice core via air freight in a dry ice packing.

What we would like to know is the minimum size of individual samples which you can use. If it is small enough (i.e., 1-3 cm.) we could furnish you with a reasonably large number of samples from various depths and different cores. If the minimum amount per individual sample were much larger we could furnish nearly as many since we have not as yet worked on most of the ice core which we have collected.

The ice cores are 3" in diameter and come from four separate locations: 2 located in a floating portion of the original ice shelf, 1 in a portion of the ice shelf which is thought to have formed since 1946, and the 4th in a part of the original shelf which has been grounded sometime in the past. The first two holes were drilled to a depth of 33 meters, the third to a depth of 11 m. (sea; ice boundary), and the fourth to a depth of 53 meters of which the upper 33 meters were recovered. The floating ice shelf in all areas except that part in which the 11 meter hole was drilled is composed of a brine-soaked "basement" ice (sea ice?--we are working on this now) and a "dry" upper layer composed of lake ice and ice firn(?). These two units vary from place to place but attain a maximum total thickness of 50 m. Our first and second and fourth holes include all of this upper layer and 5-10 meters of this lower "basement" ice. The age of this "basement" ice is thought to be between 3000 and 1600 years, while the upper layer is considered to have accumulated between 1600 and 400 years ago. A net loss has occurred during the last 400 years. A good summary of the dating of this ice is found in Vol. 13, No. 1, 1960, of "Arctic" under an article by A. P. Crary entitled, "Arctic Ice Island and Ice Shelf Studies."

The remaining number 3 core was taken, as mentioned previously, from an area which began forming from sea ice in 1946, in the Markham Bay "reentrant" area of northern Ellesmere Island.

I hope this summary will give you an adequate picture of our cores and the environment from which they were taken. When you let us know the amounts of ice you need and those portions of the cores from which you wish them taken, we will write you concerning the date of shipping, etc.

Sincerely yours,

Richard Ragle

Richard Ragle

Robert Blair

